

Our Docket No.: 01-00008
Inventors: Stuelpnagel et al.
Serial No.: 10/767,476
Filing Date: January 28, 2004

REMARKS

Claims 29-58 are currently pending and under examination. Claims 29 and 41 have been amended support for which can be found in the specification, for example, at Figure 1A; page 6, lines 25-35 and page 34, lines 21-23. Claims 51 and 55 have also been amended support for which can be found in the specification, for example, at page 13, lines 4-14. By the present communication, new claims 59-75 are added. Support for new claim 59 can be found in the specification, for example, at page 13, lines 4-14. Support for new claims 60 and 68 can be found, for example, at Figure 1A; page 1, lines 11-12; page 5, line 36, through page 6, line 2; page 6, lines 25-35; page 8, line 6, through page 9, line 3; page 11, lines 7-35 and page 34, lines 21-23. Support for new claims 61 and 69 can be found, for example, at page 6, lines 32-34. Support for new claims 62 and 70 can be found, for example, at page 24, line 30, through page 25, line 30. Support for new claims 63 and 71 can be found, for example, at page 8, lines 6-26. Support for new claims 64, 65, 72 and 73 can be found, for example, at page 11, lines 4-11. Support for new claims 66 and 74 can be found, for example, at page 10, line 9. Support for new claims 67 and 75 can be found, for example, at page 9, lines 14-20. Accordingly, the amendments and new claims do not raise any issues of new matter. Therefore, entry of the amendments is respectfully requested. Following entry of the amendments claims 29-75 will be under examination.

Status of Related Case

There is currently one U.S. patent applications under prosecution that is priority-related to the instant application. The related application is US Ser. No. 10/767,249 and an Office Action was mailed in connection with that case on April 30, 2007.

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Rejections Under 35 U.S.C. § 102

Claims 29-32, 35-39, 41-42, 45-49, 51-52, 54-56 and 58 are rejected under 35 U.S.C. § 102(b) as allegedly anticipated by Rava et al. (US 5,545,531). In this regard, the Office Action alleges that Rava et al. describes an “array of arrays” including individual DNA or probe chips in each well of a Microplate wherein the first substrate is a microtiter plate and the second substrate is a wafer or discretely placed probes and each probe is different.

Applicants respectfully traverse the rejection. As an initial matter, Applicants would like to clarify previous arguments. In the response mailed March 9, 2007 Applicants asserted “Thus, the claims require that a substrate includes several arrays that are each configured as projections that fit within wells.” In the current Office Action (mailed April 22, 2007) the response to arguments asserts “In response to applicant’s argument that the references fail to show certain features of applicant’s invention it is noted that the features upon which applicant relies (i.e. multiple arrays in each well) are not recited in the rejected claim(s).” Applicant’s respectfully submit that although the claims encompass embodiments wherein multiple arrays are in each well this is not the feature upon which Applicants were relying to distinguish over the art of record. Rather, Applicants attempted to point out that the claims require that the second substrate has a plurality of projections and this plurality of projections is configured to fit into a plurality of wells (i.e. multiple arrays in multiple wells). Presently the claims have been amended to more clearly recite this configuration, as set forth in further detail below.

Claim 29 as amended recites (a) a first substrate with a surface comprising a plurality of assay wells comprising samples; and (b) a second substrate comprising a plurality of array locations on a single projection, each array location comprising a plurality of discrete sites, wherein said sites comprise different bioactive agents, and wherein said plurality of array locations is configured as a plurality of projections to be dipped from above into said plurality of assay wells comprising samples. Thus, claim 29 and its dependents require that the first substrate has a plurality of wells, that the wells have a sample present, that the second substrate has a plurality of projections, and that the plurality of the projections is dipped from above into

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the plurality of wells that have the sample. Rava et al. does not describe an array of arrays having this configuration. Rava et al. describes three chip plates

Several methods of making biological chip plates are contemplated. In one method, a wafer and a body are provided. The wafer includes a substrate and a surface to which is attached a plurality of arrays of probes. The body has a plurality of channels. The body is attached to the surface of the wafer whereby the channels each cover an array of probes and the wafer closes one end of a plurality of the channels, thereby forming test wells defining spaces for receiving samples. In a second method, a body having a plurality of wells defining spaces is provided and biological chips are provided. The chips are attached to the wells so that the probe arrays are exposed to the space. Another embodiment involves providing a wafer having a plurality of probe arrays; and applying a material resistant to the flow of a liquid sample so as to surround the probe arrays, thereby creating test wells.

See column 2, lines 46-61 of Rava et al. All three of the chip plates described by Rava et al. have configurations that are substantially different from that required by claim 29.

The first type of chip plate described by Rava et al., in which a wafer is attached to a second body having a plurality of channels, differs from the claims because the chip plate is flat and does not include array locations configured as a plurality of projections to be dipped from above into said plurality of assay wells comprising samples. There is no description in Rava et al. of a wafer in which the arrays are in any way configured as projections. Furthermore, even assuming *arguendo* that the arrays on the chip plate could in some way be considered as projections, this configuration of Rava et al. does not support dipping from above into wells having samples, as claimed. Rather, in the Rava et al. configuration the chip plate must be mated with the bottom of the body in order to form wells with the channels of the body.

The second type of chip plate described by Rava et al. uses chips attached to wells in a body. This chip plate differs from the claimed configuration because the chips are separated one from the other, therefore lacking any connection to each other on what can be considered as the "second substrate" required by the claims. Rather the chips can only be considered to be connected to each other through the body which, as set forth above in regard to the first configuration of Rava et al., does not support dipping as claimed. Thus, the second type of chip

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plate described by Rava et al. does not satisfy the requirements that the "plurality of array locations is configured as a plurality of projections to be dipped from above into said plurality of assay wells comprising samples."

The third type of chip plate, in which a material resistant to flow of a liquid sample surrounds a probe array, differs from the claims because again the chip plate is flat such that it does not include array locations configured as projections to fit within wells. For the reasons given above in regard to the first configuration of Rava et al. this third configuration does not support dipping from above into wells having samples, as claimed.

The above arguments are provided with regard to independent claim 29 for clarity. However, independent claim 41 has also been amended to require that "said plurality of array locations is configured as a plurality of projections to be dipped from above into a plurality of wells." Therefore, claim 41 is novel over Rava et al. at least for the reasons set forth above in regard to claim 29. Furthermore, all of the other rejected claims are dependent from claim 29 or 41 and are therefore novel. Accordingly, reconsideration and withdrawal of the rejection is respectfully requested.

Claims 29-32, 35-42, 45-52 and 55-56 are rejected under 35 U.S.C. § 102(b) as allegedly anticipated by Holmes et al. (US 5,549,974). The Office Action alleges that Holmes et al. describes chemical arrays with a first substrate which can be wells or a microtiter plate and a second substrate which can be beads, resins pins etc. in the wells of a microtiter plate with different chemicals on each bead, resin, pin etc.

Applicants respectfully traverse the rejection. Applicants maintain for the reasons of record that Holmes et al. does not describe array locations that have a plurality of different bioactive agents that are configured as projections in accordance with the claims. The Office Action in its reply at page 7 alleges that the arguments are not convincing because "the features upon which applicant relies (i.e. a single projection with multiple molecules attached) are not recited in the rejected claim(s)." The claims have been amended herein to require "each array location comprising a plurality of discrete sites on a single projection." Accordingly, Holmes et

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al. does not anticipate the claims. Reconsideration and withdrawal of the rejection is respectfully requested.

Claims 29-52, 54-56 and 58 are rejected under 35 U.S.C. § 102(e) as allegedly anticipated by Felder et al. (US 6,458,533). The Office Action alleges that Felder et al. describes arrays comprising a surface of test regions which can be wells of a microtiter plate which are further subdivided into smaller subregions with different biological reagents attached.

Applicants respectfully traverse the rejection. Applicants maintain, for the reasons of record, that Felder et al. only describes surfaces having arrays at the bottom of wells and does not describe a substrate having several arrays that are each configured as projections that fit within wells. The Office Action in the reply at page 9 appears to rely on an embodiment of Felder et al. in which beads are used to anchor probes to the bottom of the wells in order to maintain the rejection. In this regard the Office Action appears to consider the beads as "projections" within the wells. This begs the question, projections of what? Although the beads may be considered to sit within wells such that they project from the bottom of the wells, this does not satisfy the claimed requirements for a second substrate (i.e. a substrate other than the first substrate having wells) that has a plurality of array locations configured as projections. Furthermore, the claims as amended require that the "plurality of array locations is configured as a plurality of projections to be dipped from above into said plurality of assay wells comprising samples." There is no structure in Felder et al., with or without beads, that has a plurality of projections that can be dipped from above into a plurality of wells having samples. Therefore, the claims are novel over Felder. Accordingly, reconsideration and withdrawal of the rejection is respectfully requested.

Claims 29-32, 35-42, 45-52, 54-56 and 58 are rejected under 35 U.S.C. § 102(e) as allegedly anticipated by Wang et al. (US 5,922,617). The Office Action alleges that Wang et al. describe a solid surface with grooves that can be separated with walls that contain microbeads or arrays in the grooves. The Office further alleges that Wang et al. describes microtiter plates.

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Applicants respectfully traverse the rejection. Applicants maintain for the reasons of record that Wang et al. does not describe array locations that have a plurality of different bioactive agents and that are configured as projections in accordance with the claims. The Office Action in its reply at page 11 alleges that the arguments are not convincing because “the features upon which applicant relies (i.e. a single projection with multiple molecules attached) are not recited in the rejected claim(s).” The claims have been amended herein to require “each array location comprising a plurality of discrete sites on a single projection.” Accordingly, Wang et al. does not anticipate the claims. Reconsideration and withdrawal of the rejection is respectfully requested.

Rejections Under 35 U.S.C. § 103

Claims 29-58 are rejected under 35 U.S.C. § 103(a) as allegedly obvious over Felder et al. (US 6,458,533) and Walt et al. (US 6,327,410). The Office Action relies on Felder et al. for the reasons set forth in the respective novelty rejection. The Office Action acknowledges that Felder et al. does not teach fiber optic bundles. However, the Office Action alleges that Walt et al. describes fiber optic bundles and that it would have been obvious to modify the wells taught by Felder et al with the fiber optic bundles of Walt et al.

Applicants respectfully traverse the rejection. Applicants submit that for the reasons set forth above in response to the novelty rejection over Felder et al., the reference does not teach or suggest all elements of the claim, including for example, a second substrate having a plurality of array locations wherein said plurality of array locations is configured as a plurality of projections to be dipped from above into said plurality of assay wells comprising samples. Walt et al. is relied upon for an alleged modification to the wells of Felder et al. and as such is not relied upon for teaching or suggesting a second substrate having a plurality of array locations wherein said plurality of array locations is configured as a plurality of projections to be dipped from above into said plurality of assay wells comprising samples. Therefore, Walt et al. does not cure the deficiencies of Felder et al. and the combination of cited references can not teach or suggest all

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of the claimed elements. Absent this, the claims are unobvious. Accordingly, reconsideration and withdrawal of the rejection is respectfully requested.

Double patenting

Claims 29, 31, 35, 37, 38, 40, 41, 45, 47, 48, 50, 52-53 and 56-57 are rejected on the ground of nonstatutory obviousness-type double patenting as allegedly unpatentable over claims 1-4, 7-9, 12-18, and 24-30 of US 6,429,027.

Applicants respectfully traverse the rejection. Nevertheless, in order to further prosecution of the application claims 29 and 41 have been amended to require, *inter alia*, that the plurality of array locations is configured as a plurality of projections to be dipped from above into said plurality of assay wells comprising samples or into a plurality of wells of a microtiter plate. Therefore, the claims as amended are patentably distinct from the claims of US 6,429,027. Accordingly, reconsideration and withdrawal of the rejection is respectfully requested.

Claims 29, 35 and 52-54 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as allegedly unpatentable over claims 1 and 3-7 of copending application 10/363,240.

Applicants will consider amending and/or canceling claims in one or both of the applications or filing a terminal disclaimer if necessary and appropriate when there is an indication of otherwise allowable subject matter.

Claims 29-38, 40-48 and 50 are provisionally rejected on the ground of nonstatutory obviousness-type double patenting as allegedly unpatentable over claims 29, 30, 36-45, 49-52 and 55 of copending application 09/606,369.

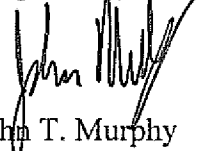
Application 09/606,369 has been abandoned for failure to timely file a proper reply to an Office Action. A notice to that effect was placed in the file on October 17, 2007. Accordingly, the rejection is moot.

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CONCLUSION

In light of the Amendments and Remarks herein, Applicant submits that the claims are in condition for allowance and respectfully request a notice to this effect. The Examiner is invited to call the undersigned agent should there be any questions.

Respectfully submitted,



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